12-2001

The Relationship Among Self-Esteem, Self-Efficacy, and Training Performance at a Government-Funded Nuclear Operations Complex in East Tennessee

Garland Sharp
University of Tennessee - Knoxville

To the Graduate Council:

I am submitting herewith a thesis written by Garland Sharp entitled "The Relationship Among Self-Esteem, Self-Efficacy, and Training Performance at a Government-Funded Nuclear Operations Complex in East Tennessee." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Human Resource Management.

Gregory Petty, Major Professor

We have read this thesis and recommend its acceptance:

Jackie Dejonge, Debbie L. Mackey

Accepted for the Council:
Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

To the Graduate Council:

I am submitting herewith a thesis written by Garland Sharp entitled "The Relationship Among Self-Esteem, Self-Efficacy, and Training Performance at a Government-Funded Nuclear Operations Complex in East Tennessee." I have examined the final paper copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Human Resource Development.

Gregory Petty, Major Professor

We have read this thesis
and recommend its acceptance:

Accepted for the Council:

Vice Provost and Dean of Graduate Studies

THE RELATIONSHIP AMONG SELF-ESTEEM, SELF-EFFICACY, AND TRAINING PERFORMANCE AT A GOVERNMENT-FUNDED NUCLEAR OPERATIONS COMPLEX IN EAST TENNESSEE

A Thesis

Presented for the Master of Science

Degree

The University of Tennessee, Knoxville

Garland Sharp

December, 2001

ACKNOWLEDGMENTS

I would like to express my appreciation for the unceasing love and support of my wife, Mildred, and my two children, Michael and Vanessa. Many thanks go to my major professor, Dr. Gregory Petty, without whose help and patience this work could not have been completed. Words of appreciation are also owed to Dr. Jackie Dejonge and Dr. Debbie L. Mackey, who served on my committee; their support and guidance were invaluable. I am also grateful to my former boss, Dr. Mary Benton, whose words of encouragement and support were there when I needed them. Finally, special thanks to Mae Jean King whose understanding and support played a great part in this effort.

ABSTRACT

The primary purpose of this study was to examine the relationship among self-efficacy, self-esteem, and training performance. This study was similar to a study conducted by Mone, Baker, and Jeffries in 1995. Using college students, Mone et al. (1995) tried to determine which construct, self-efficacy or self-esteem, more accurately predicted academic success. This study's purpose was to determine if relationships existed among self-efficacy, self-esteem, and training performance in an industrial training situation using employees in the workplace.

A self-esteem and self-efficacy instrument along with a written test were used to gather data from the entire population (N=75) of workers at a government funded nuclear operations complex. The Coopersmith Self-Esteem Instrument (SEI) measured self-esteem in this study. A Grade Self-Efficacy Scale adopted from the study conducted by Mone et al. in 1995 measured self-efficacy in this study. A written post-test measured training performance.

Inferential statistics including correlation and regression was used to obtain the correlation among self-efficacy, self-esteem, and training performance. Using an SPSS Statistical Analysis program, a Pearson r correlation was obtained for the sample population among self-efficacy, self-esteem, and training performance.

Findings disclosed that there was a significant positive relationship between self-esteem and training performance. There was also a significant positive relationship

between self-efficacy and training performance. Finally, the findings disclosed that there was a significant positive relationship between self-esteem and self-efficacy.

TABLE OF CONTENTS

TABLES

CHAPTER I

INTRODUCTION

As the global economy continues to expand, corporate America will need a more highly trained workforce that performs at higher levels. The technological explosion has forced many workers to learn at higher levels and adapt to rapid change. Martorana (1996) stated that we are seeing technology affect the need for ongoing education and training throughout a person's life. Whalen (1997) said that in order to keep up with the ever-changing workplace, more and more training is being required so that employees will have the knowledge and skills necessary to perform their jobs effectively.

Training professionals have traditionally focused on developing good training programs and hoped that this would help workers perform their jobs effectively. However, some experts such as Mathieu, Mathieu, and Tannenbaum (1993) believed that training professionals should have adopted a more global or system approach to increase worker effectiveness. They argued that individual and situational variables can often determine how effectively workers perform their jobs after training. They believed that individual variables of trainees such as their goals; their level of self-efficacy before, during, and after training; and their self-regulatory behaviors could impact the effectiveness of the training program.

If Mathieu et al. (1993) are correct, there may be a relationship among self-esteem, self-efficacy, and worker effectiveness through training programs. If workers perform well during training, it might be expected that they would perform well on the job. This study examined two behavioral constructs: self-esteem and self-efficacy and the relationship to performance in an industrial training course.

Statement of the Problem

Previous research and conventional wisdom revealed a strong relationship between an individual's beliefs and his or her actual performance. Training practices at a government-funded nuclear operations complex in the southeastern United States indicated some disagreement as to whether workers' beliefs about their self-esteem or self-efficacy enhanced their performance. There is some disagreement about the motivation theories of self-esteem and self-efficacy and knowledge of their motivational factor critical to operating effective training programs. This was the basic reason for the conduct of this research to determine the relationship among self-esteem, self-efficacy, and training performance. The postulation that is the basis for this work is that workers' beliefs about themselves and their work affect performance.

In his book, Maximum Achievement, Tracy (1995) supported the idea that whatever people believe, if they believe it strongly enough, it becomes their reality. Tracy felt that people walk, talk, behave, and interact with others in a manner consistent with their beliefs. He wrote that even if people's beliefs are totally false, if they believe them, the beliefs would be true for them.

Individuals' beliefs about a task seem to affect their performance. If people feel confident that they could accomplish a task, they have a greater chance of success. However, if they feel that a task is impossible to accomplish, they would not try or, at best, would make a halfhearted effort. The beliefs of individuals create a self-fulfilling prophecy, that is, if people accept a thing as true, their belief makes it a fact. Tracy (1995) quoted Henry Ford as saying, "If you believe that you can do a thing, or if you believe you cannot, in either case, you are right."

Several meetings were held at the operations complex in the southeastern United States to decide what training workers should attend. Some managers believed that workers should attend self-esteem building classes to aid in high performance. Other managers felt that such courses were of little value in promoting high performance and that workers should only attend job-specific training. These managers believed that job-specific training enhances workers' self-efficacy toward their jobs, which could lead to higher levels of performance. Because the managers who believed in the significance of self-efficacy were not convinced of the significance of self-esteem, many workers were not allowed to attend self-esteem building classes

Purpose of the Study

The purpose of this study was to determine if self-efficacy and self-esteem were correlated to performance in an industrial training course. This study was similar to a study conducted by Mone, Baker, and Jeffries in 1995. Using college students, Mone et al. tried to determine which construct, self-efficacy or self-esteem, more accurately predicted academic success. More specifically, this study sought to determine if significant relationships existed among self-efficacy, self-esteem, and training performance in an industrial training situation using employees in the workplace.

Delimitations

1. The population was 75 full time workers at a government funded nuclear operations complex.
2. The participants in the study were selected by their training manager to facilitate scheduling.
3. Participants were required to take this course to perform their jobs.

4. Self-efficacy and self-esteem were determined from instruments completed by the participants.

Objectives

The objectives of this study were:

- To determine the relationship between self-esteem and successful classroom performance using adults in the workplace, and
- To determine the relationship between self-efficacy and successful classroom performance using adults in the workplace.

Hypotheses

H01: There is no significant relationship between students' scores on a self-esteem instrument and their scores on a written test after a two-day training course.

H02: There is no significant relationship between students' scores on a self-efficacy instrument and their scores on a written test after a two-day training course.

Assumptions

1. The study assumed that the respondents could make a fair assumption of their self-esteem and self-efficacy and would report this information accurately.
2. Demographic variables such as socio-economics, ethnicity, and gender may influence personnel self-esteem and self-efficacy. However, these variables were not controlled.

Rationale

Human resource development and training professionals may be able to make better decisions concerning training programs if beliefs such as self-esteem and self-

efficacy are related to training performance in a training program. These professionals may be able to address the concerns across human motivation theories of the relative effects of individuals' self-efficacy and self-esteem on personal goals and performance. Using the results of this study, training professionals might be able to develop more effective training programs, thus causing workers to be more effective on the job.

Many scholars, such as the American sociologist W. I. Thomas, supported the idea that individuals' beliefs affect behavior and performance. Robertson (1987) stated that over 50 years ago Thomas made a simple but profound observation that has come to be known as the Thomas Theorem. According to Robertson the observation was as follows:

> If people define a situation as real, they are real in their consequences. If members of a society believe that the earth is flat, that Jupiter rules the heaven, that illness is caused by x-rays, then the supposed flatness of the earth, the rule of Jupiter, the presence of witches, or the existence of x-rays will become as much a part of reality to people in that society as any other feature of their social or physical world. They will act in terms of that reality-by not sailing toward the edge of the earth, by making sacrifices to Jupiter, by avoiding or making use of radiation. (p. 160)

The most quoted scholar cited during the review of literature on self-efficacy and self-esteem was Albert Bandura. According to Pajares (1995), Bandura explained four ways in which self-beliefs affect behavior. Pajares concurred with Bandura, who stated first that self-beliefs influence choice of behavior. People are likely to engage in tasks in

which they feel competent and confident and avoid those in which they do not. However, he said that this could be problematic. Individuals with high efficacy beliefs but poor skills may behave in concert with their sense of efficacy, but the consequences may cause harm. In contrast, individuals with a low sense of efficacy but high skill may suffer from a lack of confidence and fail to undertake tasks they are capable of completing.

Pajares (1995) believed that self-beliefs help to determine how much effort people expend on an activity and how long they persevere. He further stated that the higher the sense of efficacy, the greater the effort expenditure and persistence. This function of self-beliefs helps create a type of self-fulfilling prophecy, as the perseverance associated with high efficacy is likely to lead to increased performance. Increased performance also raises the person's sense of self-efficacy. However, low efficacy limits the potential for high performance and limits the potential for improving the person's self-perceptions.

Pajares (1995) felt the third way that self-beliefs affect human agency is that they influence an individual's thought patterns and emotional reactions. Pajares reported that Bandura believed people with low efficacy, for example, might believe things are tougher than they really are. This belief fosters stress and a narrow vision of how best to go about solving a problem. High efficacy, on the other hand, is responsible for feelings of confidence and serenity in approaching difficult tasks.

Pajares (1995) believed the fourth way in which self-beliefs affect behavior is by recognizing humans as producers rather than simply foretellers of behavior. Pajares explained that self-confidence contributes to success, which, in turn, breeds more challenging performance. In contrast, self-doubt contributes to hesitancy, defeat, and

failure to try. Pajares stated that our perceptions of efficacy help determine how we think, feel, and behave. He stated that self-beliefs influence behavior and people actively use these beliefs to influence how they behave.

Many experts such as Tracy (1995), Bandura (1997), and Robertson (1987) felt that one's beliefs profoundly affect every condition of one's life. Throughout the educational, psychological, and organizational literature, two of the constructs that were said to relate to performance were self-esteem and self-efficacy.

Researchers have disagreed on which construct, self-esteem or self-efficacy, better influences high levels of performance. Many psychologists and educators such as Tracy (1995), Pascarella (1999), and Branden (1987) believe that one's self-esteem is the prerequisite for success in any endeavor. They believe that self-esteem has a profound influence on performance. Tracy stated that self-esteem is the foundation quality of high performance and the key to happiness and personal effectiveness. Pascarella wrote that all high performance begins with high levels of self-esteem. He said if one wants to build successful organizations, one should build workers' self-esteem. Branden believed that one's self-esteem touches almost every facet of one's life. He expressed the idea that all psychological difficulties result from poor self-esteem. Branden stated that apart from problems that are biological in origin, he could not think of a single psychological difficulty that is not traceable to poor self-esteem. Branden believed that of all the judgments people pass, none is as important as the one they pass on themselves. He reported that positive self-esteem is a cardinal requirement for a fulfilling life.

Other experts wrote that one's self-efficacy has a great influence on one's level of performance. For example, Kohn (1994) stated that one couldn't expect one's general sense of self or self-esteem to have much to do with one's mathematics ability. He said that the broader version of self-esteem appears to be the least valuable. He believed that high self-efficacy has more to do with high performance.

Bandura (1997) stated that self-efficacy is the most influential arbiter in influencing behavior or performance. He believed that self-efficacy plays a powerful role in determining the choices people make, the effort they expend, how long they will persevere when challenged, and the degree of anxiety or confidence they bring to a task. He said that perceived self-efficacy helps explain why people's behavior differs widely even when they have similar knowledge and skills.

Stajkovic and Luthans (1998) stated that there is now both theory and research to postulate that individuals who perceive themselves as highly efficacious will activate sufficient effort that, if well executed, will produce successful outcomes.

Implications of this study may also reach far beyond the boundaries of the training arena. All aspects of an employee's life may be impacted by the findings. If the hypotheses are supported, it could be postulated that self-esteem and self-efficacy could affect areas of performance other than training performance.

Definitions

Deep processing approach is defined as the extent to which a student critically evaluated, conceptually organized, and compared and contrasted information being studied. (Abouserie, 1995).

Globetrotting is defined as a superficiality of approach; individualistic methods of organizing knowledge; or a tendency to jump prematurely to conclusions or to seek generalizations without sufficient evidence. (Abouserie, 1995).

Improvidence is defined as one's emphasis on facts and details, difficulty in building up an overall picture. (Abouserie, 1995).

Meaning orientation is defined as one's orientation toward a search for meaning, motivated by interest in course topics. (Abouserie, 1995).

Multimedia Computer Based Instructions Two is defined as a computer based-instructions that employs sophisticated hardware and software tools. These tools allow for the creation and use of high quality 2-D color still images and drawings, 3-D models, 2-D and 3-D animations/simulations, audio elements, and video segments. (Mackenzie & Jansen, 1998).

Self-efficacy is defined as how people judge their capabilities to organize and execute courses of action required to attain designated types of performance. (Mone, Baker, & Jeffries, 1995).

Self-esteem is defined as how one evaluates self and one's characteristics, the personal judgment of worthiness expressed in the attitudes one holds toward oneself. (Kohn, 1994).

Self-fulfilling Prophecy is defined as achieving fulfillment as a result of having been expected or foretold. (The American Heritage College Dictionary, 1993).

CHAPTER II

REVIEW OF LITERATURE

Introduction

A review of literature was undertaken to gain insight into the current issues concerning methods to enhance training performance. Chapter I touched on information obtained from a review of the literature. This chapter provides an expanded discussion of the subjects presented in Chapter I with additional information on self-esteem and self-efficacy. Also, this chapter begins with a discussion of other methods that might be used to enhance training/academic performance.

Enhancing Training/Academic Performance

There are many ways in which instructors can enhance the student's achievement in the classroom. This section is not an exhaustive treatise of this subject. However, this section touches on a few of those methods. One might enhance training/academic performance by using technology in the classroom. Harvice (1998) collected data from 367 students in a small state university in the Midwest. An Introduction to Computer Information Systems was taught to seven sections consisting of approximately 52 students that represented a variety of majors. The control group consisted of 206 students. The treatment group consisted of 161 students.

The purpose of the study was to determine if there was a significant difference in the achievement of students taught with a traditional method compared to students taught with an integrated media method. Harvice (1998) administered a pretest and a posttest to both groups to measure achievement of the course objectives.

The traditional instructional method utilized a lecture format with limited

opportunities for students' participation. The chalkboard was the only tool used by the instructor to aid in teaching the class. Most of the instructor's time was spent lecturing and presenting material from the text. The instructor spent considerable time covering study questions and reviewing test materials before and after tests. The students prepared for the posttest using textbooks, lecture, and lab activities.

The integrated media instructional method utilized an IBM-compatible computer with a transparent active matrix color liquid–crystal (LCD) panel. The instructor placed the LCD panel on an overhead transparency projector, and the PC display was shown on a screen. The instructor used a videocassette recorder (VCR) to display video segments via the color panel. The instructor also reviewed computer application problems in the class on the computer prior to each assignment. Field trips to selected computer facilities were videotaped by the instructor and viewed in class. The material was presented in computer-based video and VCR.

To determine if there was a statistically significant difference in the achievement between students instructed in the traditional manner and those students instructed through integrated media, Harvice (1998) calculated the difference between the pretest and the posttest. One might have suspected that Harvice would find the students instructed with the integrated method to have higher gains between the pretest and posttest scores than the students instructed in the traditional manner. However, he found just the opposite. Harvice discovered that the students in the traditional instructional group showed higher achievement gains between the pretest and posttest than the students in the integrated media instructional group.

The use of technology, such as the use of integrated media, can enhance training and academic performance if used correctly. It is important that one provides an environment with the proper lighting that is conducive to learning. Also, one must guard against equipment and setup problems that frustrate the teacher and the students. Harvice (1998) stated that poor lighting problems and equipment difficulties that occurred throughout the training affected the results of the study.

A Mackenzie and Jansen (1998) study supported the idea that the use of technology can enhance academic performance. They conducted a study to determine the impact of multimedia computer-based instruction on students' comprehension. The researchers collected data from students from a technical graphics course at Montana State University–Northern.

The Mackenzie and Jansen (1998) study focused on whether there was a significant difference between students who received instruction using a Multimedia Computer Based Instructions Two (MCB1-2) format compared to students who received instruction using a traditional format. The class met three times a week for 15 weeks. At the beginning of the course, both groups of students were given a pretest. During the first five weeks of the course, both groups were instructed using the traditional method. At the end of the five weeks, both groups were tested. The treatment was administered during weeks six and seven.

The MCB1-2 treatment consisted of 2-D and 3-D images, animations, and audio elements that were integrated into an interactive presentation. In contrast, the traditional instruction treatment consisted of black and white still-image transparencies and selected physical models. Mackenzie and Jansen (1998) noted that when using the traditional

method, there was little use of the chalkboard due to the nature of the material presented during the two-week treatment period of weeks six and seven.

At the conclusion of week seven, a posttest was given to both groups covering only the material taught in weeks six and seven to measure achievement. At the end of the semester, a posttest was given that covered all of the material beginning with week six to the end of the course in order to measure retention.

Mackenzie and Jansen (1998) found a positive significant difference between the scores of students taught using the MCB1-2 method and those students taught using the traditional method. They found a positive significant difference in the scores on the achievement tests and the retention tests.

The Mackenzie and Jansen (1998) study's results provided support for using technology in the classroom. Effective use of technology in the classroom can enhance students' performance. Gokhale (1996) corroborated the findings of Mackenzie and Jansen's study. She collected data from 32 students enrolled in two sections of an electronic course in an industrial technology department in a Midwest state university. The study sought to determine if there would be a significant difference in achievement based on a problem-oriented test and a drill-and–practice test between students in an experimental group versus a control group.

Both groups met twice a week for an hour and 50 minutes. The instructor assigned the control group and the experimental group the task of designing, building, and testing a three-stage amplifier within six weeks. Students in both groups were allowed to work with a partner of their choice. There was only one difference between the treatment for the control group and the experimental group. The experimental group

designed and tested the amplifier using computer simulation software. They built the amplifier in the lab only, after the amplifier had been designed and tested using computer simulation. The control group designed, built, and tested the amplifier in the lab without the use of computer simulation.

Gokhale (1996) found that the mean test score for the group using computer simulation (13.6) was significantly higher than the lab group (9.1) that did not use computer simulation to design and test the amplifier. She found the difference significant at the 0.05 alpha level ($t= 2.89$, $p< 0.01$).

One might conclude from Mackenzie and Jansen's (1998) and Gokhale's (1996) studies that effectively integrating technology into traditional lecture-lab and classroom activities enhanced the performance of the student. However, Harvice's (1998) study showed that technology could inhibit learning if it is not used effectively.

Using technology in the classroom is one of the ways to enhance performance. This would be an extrinsic method. However, there are some intrinsic ways students might enhance their performance without the help of the instructor. Many athletes have reported that they use visualization or mental practice techniques to enhance their performance. Any good book on success will probably have a section on visualization to enhance performance. Some of the classics such as Brian Tracy's Maximum Achievement (1995), Napoleon Hill's Think and Grow Rich (1966), David Schwartz's The Magic of Thinking Big (1959), and Maxell Maltz's Psycho Cybernetics (1960) have sections on visualization and mental practicing.

Whetstone (1995) supported the idea that visualization or mental practice enhances performance. Whetstone concluded from a study he conducted that mental

practice could enhance performance in students' marksmanship. He collected data from 72 volunteers enrolled in three Basic Law Enforcement sessions at the University of Illinois Police Training Institute. The participants were administered a marksmanship pretest consisting of firing 25 rounds of ammunition at a target. The participants were placed into groups according to their test scores. They were then randomly assigned to a treatment or control group to achieve balanced shooting ability groups.

The control group received the standard firearm training that consisted of firing 50 and 150 rounds of ammunition at a target of varying distances. The treatment group received the same training as the control group with the exception of imagery training and time to mental practice marksmanship.

The treatment groups were given an initial two-hour guided holistic imagery training session prior to the marksmanship-training phase. This was to ensure that each participant understood the process and would conduct the mental practice in the same manner. After the initial two-hour guided holistic imagery training, the treatment group was provided with a five-minute guided holistic imagery mental practice session before going to the firing range. The instructors also requested each participant to practice each night for a minimum of five minutes during the three weeks of firearms training.

Whetstone (1995) found that there was a significant positive difference between the scores on the posttest for the experimental groups and the control groups. He found that the treatment group's mean marksmanship gain score was 32.86 points above the control group's score.

Using mental practice is but one intrinsic method that individuals may use to improve performance. Another way to enhance performance is for individuals to use

relaxation techniques before and during training. Schreiber and Schreiber (1995) supported this idea. They examined the use of relaxation techniques and positive self-esteem to improve academic achievement. They used data collected from 52 undergraduate college students who volunteered for the study.

During the first week of class the instructor told the experimental group that beginning with week five they would be instructed in muscle relaxation that would help them with their schoolwork. The relaxation training would occur the last 15 minutes of class twice a week for ten weeks. The instructor told the control group that they would be given guidance to help them do superior work in the classroom.

Relaxation training for the experimental group consisted of Jacobson muscle relaxation. The researchers stated that these were used to build concentration skills and recall of the coursework. Also the relaxation group received Rogers' (1951) positive self-concept with emphasis on personal worth and self-actualization. In contrast, the control group was given a 15-minute review session during the time the relaxation group was being given relaxation and self-esteem enhancing training.

The researchers collected data on self-esteem and anxiety using the Cantell and Scheier Anxiety Scale (1961). The researchers measured self-esteem by having the students answer two questions about their feelings. The researchers administered a midterm examination in week nine and a final examination at the end of the course.

Schreiber and Schreiber (1995) found that the mean score of the two groups on the midterm test was significantly different, with the relaxation group having the higher scores. They also found that the mean score of the two groups on the final examination was significantly different with the relaxation group having the higher scores. Schrieiber

and Schrieber found no significant difference in anxiety and self-esteem between the two groups.

The studies by Schreiber and Schreiber (1995) and Whetstone (1995) supported the use of mental practicing and relaxation to enhance performance in the classroom. However, Ostrander, Schroeder, and Ostrander (1994) in their book entitled Super-Learning 2000 suggested using relaxation and visualization together to enhance performance.

Using technology, mental practice, and relaxation techniques in the classroom are just a few methods that have been shown to enhance academic/training performance. However, in the review of literature, many pundits stated that self-esteem and self-efficacy had a relationship or was predictive of academic/training performance. Thus if one could enhance the student's self-esteem and self-efficacy, one might be able to enhance training/academic performance. The following section will examine self-esteem and self-efficacy as they relate to academic performance.

Self-Esteem

Although self-efficacy has been discussed only recently in the literature, scholars have discussed the significance of self-esteem for years. The definitions of self-esteem varied slightly in the review of literature. Branden (1994), who has been regarded as the father of the self-esteem movement, defined self-esteem as the disposition to experience oneself as competent to cope with the basic challenges of life and as worthy of happiness.

Tracy (1995) defined self-esteem as how people felt about themselves. He also defined self-esteem as how much one liked oneself. He said that self-esteem is determined by two factors, self-efficacy and self-value. Gardner and Pierce (1998)

defined self-esteem as one's perception of one's self as capable, important, successful, and worthy.

Kohn (1994) defined self-esteem in terms of how people evaluate themselves and their characteristics; the personal judgment of worthiness expressed in the attitudes people hold toward themselves. Gardner and Pierce (1998) stated that Stanley Coopersmith defined self-esteem as the degree to which people perceive themselves as capable, significant, and worthy. The above definitions seem to indicate that self-esteem is a measure of one's perception of one's self-efficacy and self-worth.

Self-Efficacy

Although the definition of self-esteem varied slightly in the literature, the literature offered more consistent definitions of self-efficacy. Stanley and Murphy (1997) stated that self-efficacy was a relatively new term that was popularized by Albert Bandura in 1977. Bandura (1997) defined self-efficacy as people's judgment of their capabilities to organize and execute courses of action required to attain designated types of performance. Most of the literature reviewed presented this definition or a reasonable facsimile. Bandura's studies (as cited in Stajkovic & Luthans, 1998) stated the following:

> Self-efficacy reflects an individual's momentary belief in his or her capability to perform a specific task at a specific level of performance. For example, if a person believes that the probability of selling $30,000 of product in one month is .90, we would judge his or her self-efficacy for that level of performance as being high. (p. 49)

Stajkovic and Luthans (1998) further explained self-efficacy in terms of one's confidence in achieving a particular task and the amount of effort one would expend.

They stated that before people selected their choices and initiated their efforts, people tended to weigh, evaluate, and integrate information about their perceived capabilities. They concluded that expectations of personal efficacy determine the employee's coping behavior, how much effort would be expended, and how long that effort would be sustained during challenging situations.

Differences and Relationships between Self-Esteem and Self-Efficacy

If one looks at the factors that determine one's self-esteem, one would find self-worth and self-efficacy. Although there is a relationship between self-efficacy and self-esteem, they are different constructs. Stajkovic and Luthans (1998) distinguished between self-efficacy and self-esteem. They stated that one's self-esteem is often portrayed as a global construct that represents one's self-evaluations across a wide variety of situations. In contrast, they stated that self-efficacy is one's belief about a specific task and one's ability to complete the task. They further stated that self-esteem seems to be almost a trait-like variable that is more stable than self-efficacy. In contrast, they described self-efficacy as a dynamic construct that changes over time based on the experiences and information received by the individual. Finally, they believed that self-esteem was based on a reflective evaluation of one's self that is usually derived from perception about several personal characteristics. They believed that some people might have high self-efficacy in one task and low self-efficacy in another.

Gardner and Pierce (1998) said that self-esteem and self-efficacy were not the same concept. They stated that a hypothetical bill collector with high self-efficacy might have confidence about his or her probability to extract payments from laggard debtors. However, this same bill collector might also have negative feelings of self-worth for

having successfully done this to many financially needy families and have low self-esteem.

Bandura (1997) stated that self-esteem and self-efficacy are sometimes used interchangeably, but they are different concepts. Bandura distinguished between self-efficacy and self-esteem. He stated that perceived self-efficacy deals with the judgments of one's personal capabilities, whereas self-esteem deals with the judgments of one's self-worth. Bandura believed that there is no fixed relationship between beliefs of one's capabilities and whether one likes or dislikes oneself. He further stated that individuals might judge themselves as having low self-efficacy in an activity without suffering any loss of self-esteem. Conversely, individuals may regard themselves as highly efficacious in an activity but take no pride in performing it well, thus not affecting their self-esteem.

Although self-esteem and self-efficacy are not the same concept, a relationship exists between them. Tracy (1995) supported the idea that there is a relationship between self-esteem and self-efficacy. He stated that self-esteem consists of two factors: self-efficacy and self-worth. Tracy said that self-esteem and self-efficacy reinforce each other. When one feels good about oneself, one performs better, and when one performs well, one feels good about oneself. Tracy believed that both self-esteem and self-efficacy were essential and that neither could endure without the other.

Self-Esteem and Academic Performance

Many pundits in the review of literature believed that there was a positive relationship between self-esteem and academic performance. Studies such as those conducted by Riser (1992), Chandler (1997), and Abouserie (1995) showed strong relationships between self-esteem and academic performance. Riser collected data from

242 students in grades 7-12 in a preparatory school in a large city in the southwestern United States. He examined the reciprocal relationship between academic achievement and general self-esteem. He sought to find if relationships between academic achievement and general self-esteem were reciprocal. Also, he examined what variables mediated the reciprocal relationship between academic achievement and general self-esteem if they were reciprocal.

Riser (1992) used grade point averages (GPA) to measure academic achievement and an academic self-concept questionnaire to measure students' self-esteem. He also obtained the teachers' perception of students. He wanted to see if the students' perception of themselves matched the teachers' perceptions of the students.

Riser (1992) said that general self-esteem influences achievement. He reported that the results of the study confirmed the hypothesis that general self-esteem both influences and is influenced by academic achievement.

Riser's (1992) study showed that general self-esteem influenced achievement with students in grades 7-12. However, one might wonder if the same held true for adults. Studies by Abouserie (1995), Chandler (1997), and Woo and Frank (2000) might help to answer this question.

Abouserie (1995) also supported the idea that there is a relationship between self-esteem and academic achievement. She collected data from 105 first-year and 30 second-year students in a BA degree program in the School of Education at the University of Wales. Abouserie investigated students' self-esteem and achievement motivation and their relationship with approaches to studying and levels of processing. The researcher examined the effects of two personality variables, self-esteem and achievement

motivation, on students' learning styles. She examined the extent to which personality variables influenced students' adoption of specific learning styles.

Abouserie (1995) found that students' self-esteem had a significant effect on the way they dealt with information and learning situations. She said that the results of the study showed a significant positive correlation between students' self-esteem and their scores on comprehension learning, meaning orientation, and deep processing. She further said that there was a significant negative correlation between self-esteem and reproducing orientation, improvidence, and globetrotting. She stated this suggested that individuals with high self-esteem more frequently involved their self-concept in data processing and in adopting deep approaches to studying.

Abouserie (1995) also reported that self-esteem had a substantial influence on students' levels of processing. She stated that self-esteem contributes positively to deep processing and suggested that students who tend to use the superficial approach to learning have low self-esteem. However, students who have high self-esteem tend to use a deep processing approach. She concluded that students' exposure to self-esteem programs should lead to improvements in learning outcomes.

Chandler (1997) collected data from 254 undergraduate students in educational psychology at a large mid-western public university. He investigated the relationship between self-esteem and causal attributions of success and failures. Chandler used self-esteem and performance outcome conditions of success and failure as the independent variables. He determined success and failure conditions from feedback regarding the participant's performance on an anagram task. The dependent variable was a combination of the participants' six causal elements combined with three causal dimensions. The six

causal elements were ability, effort, immediate effort, task difficulty, luck, and mood. The three causal dimensions were internal-external locus, stability, and controllability.

Among other predictions, Chandler (1997) stated that he expected to find a positive relationship among self-esteem, expectancies of success and failure, perceived failure, actual performance, and stable causality. He found that the higher the levels of self-esteem, the higher the expectancy for success. He reported that the expectation of success and actual performance are positively related. Therefore, one could conclude from Chandler's study that there is a relationship between self-esteem and performance.

Woo and Frank (2000) further supported the idea that there is a significant positive relationship between self-esteem and academic performance. They collected data from 208 college students in a medium-sized institution in a mid-Atlantic state. The students were enrolled in an introductory health and physical education course. The researchers examined the extent to which academic self-esteem moderated the students' perceptions of grade validity.

Woo and Frank (2000) found that students with higher academic self-esteem tended to see grades as more valid than those with low academic self-esteem. They also found that there was a significant positive correlation between academic self-esteem and overall GPA.

Most of the above studies on self-esteem showed significant positive relationships between self-esteem and academic performance. However, in the review of literature, other researchers such as Mone et al. (1995) refuted the idea that self-esteem was either predictive of academic performance or had a positive significant relationship to academic

performance. These latter researchers and scholars stressed the importance of self-efficacy as being predictive of academic success.

Self-Efficacy and Academic Performance

Mone et al. (1995) refuted the idea that self-esteem is predictive of academic achievement based on a study of 215 participants enrolled in an introductory management course at a western university. They found self-efficacy to be a better predictor of success. They postulated that across three performance trials using academic exams, self-efficacy would be more highly predictive of personal goals and performance than would self-esteem. They also postulated that personal goals would be more highly predictive of self-efficacy than would self-esteem.

Mone et. al (1995) investigated the relationship between self-efficacy, self-esteem, personal goals, and performance over multiple performance trials. They stated that examining these relationships over repeated performance trials might clarify the ambiguity present in the motivation literature and increase their knowledge of the relative effects of and relationships among self-efficacy, self-esteem, personal goals, and performance. A second objective was to investigate the time-dependent effects of self-efficacy, self-esteem, and personal goals in relation to task performance feedback.

The researchers used a modified version of Rosenberg's (1965) self-esteem scale to measure students' self-esteem. Their questionnaire consisted of five instead of the usual ten items on Rosenberg's questionnaire. They measured self-efficacy by asking the students to report their confidence on a scale of zero to nine for attaining each of four grade levels on an exam. The researchers used A, high B, low B, and C as the grade

levels for the exam. They used the average of the four scores to decide the students' self-efficacy measure. They used test scores to measure academic success.

Mone et al. (1995) found that self-efficacy was significantly predictive of personal goals and performance. However, they found self-esteem was not significantly predictive of personal goals and success. They stated in their findings that the more task-specific the measure of confidence, the better the prediction of subsequent goals and performance. They concluded in their findings that if one wanted to increase personal grade goals and academic performance, it would be more effective to induce changes in self-efficacy rather than self-esteem.

Although Bouchard (1990) did not refute the idea that self-esteem is related to academic success, she supported the idea that self-efficacy is related to academic success. She collected data from 64 college student volunteers. She determined the students' self-efficacy by providing them with eight problems. The students were asked two questions: they were asked if they believed they could solve the problems; next they were asked to assess their confidence in solving the problem ranging from very unsure (10%) to completely sure (100%). She assessed performance using several measurements such as persistence in working the problems and correct responses.

Bouchard (1990) concluded that a significant relationship existed between self-efficacy and academic success. She stated that perceived self-efficacy was related both to task persistence and the student's ability to evaluate the correctness of response. In her findings she supported the contention that self-efficacy expectations contain a motivational component. This motivational component determined how persistent one would be to complete a task. Sustained effort may appear too costly unless one is

committed to particular personal objectives. She concluded from the study's results that students in the high self-efficacy group had determined higher achievement goals than those in the low self-efficacy group.

Vrugt, Langereis, and Hoogstraten (1997) further supported the idea that there is a significant positive relationship between self-efficacy and academic performance. They measured the relationship among academic self-efficacy, personal goals, and exam performance. They used data collected from 438 college freshmen psychology students in the Netherlands during two experiments.

In the first experiment, Vrugt et al. (1997) found that academic self-efficacy contributed to exam performance both directly and indirectly through pursued goals. Although they stated that their results corroborated Wood and Locke's (1987) results, they found that self-efficacy and goals accounted for a lower percentage of the variance in exam performance than Wood and Locke.

Vrugt et al. (1997) concluded that the reason self-efficacy did not contribute much to performance in their study was because other cognitive factors interacted with self-efficacy. They conducted a second experiment to examine this idea. In the second experiment, they called the cognitive factors that interact with self-efficacy malleability beliefs. These malleability beliefs included task experience and an individual's basic orientation towards achievement. They assumed that an individual with little or no experience in a task had an inaccurate self-efficacy judgment.

Vrugt et al. (1997) found that students with high self-efficacy and strong malleability beliefs, regardless of intelligence, looked at failure differently than students with low self-efficacy and low malleability beliefs. They stated that students with low

perceptions of self-efficacy and weak malleability beliefs ascribed failure to the lack of talent more than those students with perceptions of high self-efficacy and strong malleability beliefs. The researchers saw this difference among students with high and low intelligence. They further stated that students who are novices to a new task are often faced with setbacks and failure. The ascribing of failure to a lack of talent can have a demotivating effect on an individual. They believed that these individuals saw fewer possibilities to cope with setbacks and improve their performance. They believed this perception could be detrimental to motivation and inhibit individual skills and development.

The University of Hawaii (1996) also reported information that supported self-efficacy in enhancing academic performance. The University of Hawaii found that students with high self-efficacy stayed with tasks longer. This corroborated the idea expressed by Bandura (1997) that one's self-efficacy or self-beliefs helped determine how much effort one expended on an activity and how long one persevered.

The University of Hawaii (1996) used data collected from 18 senior college students enrolled in a seminar on "The Social Psychology of Learning the Internet." On the first day of class, the researcher administered an instrument to measure self-efficacy. This instrument consisted of three questions (affective probes) that used a Likert-type scale to measure self-efficacy. Also, the researchers gathered data from weekly self-reports that included a questionnaire with six varieties of affective responses on a 10-point- scale.

The researcher divided the scores of the 18 students who filled out the self-efficacy prediction on the first day into upper and lower halves. The study found that the

majority of students who completed the course had high self-efficacy and their scores were in the upper half of the self-efficacy scores. All of the students who had low self-efficacy and whose scores fell in the lower half of the class dropped out of the course before completion.

One could extrapolate from this study that the higher the self-efficacy, the greater the chance of completion of a task, thus enhancing academic performance. This corroborated with Pajares (1995) and Bandura (1997). They stated that the higher the self-efficacy, the more effort one expends and the more persistence one exhibits toward completing a task. Also, one might postulate that the longer one stayed with a task, the greater one's self-efficacy toward that task developed. Tiller (1995) supported this idea. She found that the longer one engaged in a task, the greater the self-efficacy. Tiller collected data from 115 Missouri Western State College students. She examined her theory that freshmen college students had lower levels of self-efficacy than senior college students. The researcher found that freshmen had significantly lower scores on a self-efficacy checklist than in any other year. Tiller found no significant difference among the sophomores, juniors, and seniors in her study.

All of the above studies of self-efficacy supported the idea that self-efficacy has a significant positive relationship or is predictive of performance. One would expect that if one raised one's self-efficacy, one's performance would also rise. Waldersee (1994) refuted this idea. He found that changes in one's self-efficacy did not affect one's performance. He collected data from 74 employees from eight fast-food restaurants who dealt directly with customers at least 50% of the work time. Waldersee hypothesized that changes in self-efficacy were related to changes in performance. He

tried to influence self-efficacy through positive or negative feedback given to the workers.

Waldersee (1994) reported that previous research suggested the interaction of feedback and personality might potentially affect performance through self-efficacy. However, he reported that his findings failed to find a link between self-efficacy and performance. He stated several factors that might have accounted for the absence of a link between self-efficacy and performance. The sample and change in self-efficacy was quite small, and the negativity of feedback required to affect performance may not be possible in a field of study. He stated that it might have been possible that behaviors were so well rehearsed that maintenance was automatic and efficacy did not affect performance.

Summary

From the review of literature it was apparent that beliefs affected performance. The literature contained arguments that supported the idea that self-efficacy and self-esteem predicted or had a positive significant relationship on academic success. However, it was not clear which best predicted or had the strongest relationship to academic success: self-esteem or self-efficacy. Some scholars such as Mone et al. (1995) refuted the idea of the positive relationship and the predictive ability of self-esteem on academic performance. Other researchers such as Waldersee (1994) found no link between self-efficacy and performance.

CHAPTER III

METHODOLOGY

The previous chapters presented an introduction to the subject of self-esteem, self-efficacy, the specific problem to be researched, the objectives of the study, and a review of the literature. This chapter presents the methodology used in this study. The following sections of this chapter describe the subjects, instruments, and data collection procedure.

Participants

The study consisted of 75 full-time plant employees, 53 men and 22 women, in an on-the job training program. The subjects ranged from workers who actually handle hazardous materials to workers who simply frequent the areas containing hazardous materials. All participants volunteered to participate in the study and received credit for taking the course.

Instruments

The Coopersmith Self-Esteem Instrument (SEI) measured self-esteem in this study. According to Peterson and Austin (1981), the instrument was among the best known and most widely used of the self-esteem measures. They said that the SEI is brief, easily scored, reliable, and stable. They reported that there exists an impressive amount of information bearing on their construct validity. They said the measures are straightforwardly based on a general theory of self-esteem and its relationship to academic performance.

Although Peterson and Austin (1981) pointed out some problems with the instrument, they stated that the problems were endemic to all self-esteem and self-concept instruments and went on to note that researchers have been unable to agree on

the precise meaning of self-esteem. They stated that the instrument reflected this disagreement. However, they said that the instrument possessed enough reliability and validity for use in research.

Sewell (1981) also stated in the Mental Measurements Yearbook that the Coopersmith SEI applicability for research seemed virtually limitless. He highly recommended the instrument for research purposes.

The Consulting Psychologists Press, Inc. (1989) reported that since its development, the SEI has been administered to tens of thousands of children and adults participating in research studies or clinical programs to enhance self-esteem. They also reported that many researchers have validated the reliability of the instrument. Spatz and Johnston's study (as cited in The Consulting Psychologists Press, Inc., 1989) reported that they administered the instrument to over 600 students in grades 5, 9, and 12. Using Kuder-Richardson reliability estimates (KR20s), they obtained coefficients of .81 for grade 5, .86 for grade 9, and .80 for grade 12.

Kimball's study (as cited in The Consulting Psychologists Press, Inc., 1989) reported that the SEI had been administered to 7600 public school children in two northern Illinois districts. The sample was purported to be representative of the general population of the United States. Norms were compiled by grade and sex for children in grades 4 through 8. Percentile equivalents showed a consistency of score values at a given percentile regardless of the population.

A professional statistician at the University of Tennessee ran a Cronbach's Alpha and found that the SEI used in this study was reliable. The instrument had an Alpha equal to .8495.

A Grade Self-Efficacy Scale adopted from the study conducted by Mone et al. in 1995 measured self-efficacy in this study. The participants were asked to report their confidence on a scale of zero to nine for attaining each of five grade levels (96 -100, 90-95, 85-89, 80-84, and 75-79) on an exam. The average of the five scores determined their self-efficacy. Mone et al. (1995) reported that in a previous study that compared the validity of this Grade Self-Efficacy Scale with the validity of Wood and Locke's Academic Self-Efficacy scale, that Mone (1994) found the Grade Self-Efficacy Scale to be a more valid predictor of grade goals and exam performance.

A professional statistician at the University of Tennessee ran a Cronbach's Alpha and found that the self-efficacy instrument used in this study was reliable. The instrument had an Alpha of .8589.

An existing course posttest measured academic success. Subject matter experts and members from line management had validated this test. This test had been used as the end-of-course test for about two years. Due to the sensitivity and confidential nature of this information, the posttest could not be posted in the appendix.

Procedure

Data were collected in the two-day Hazardous Materials Handling course. Eight classes were conducted over a two-month period. The courses were conducted on the same two days of the week and usually held in the same building. Two instructors conducted the courses.

The course consisted of seven modules. The first section of the course covered the theory that pertained to handling and processing the hazardous materials. The second

section of the course covered the procedural requirements used when working with the hazardous materials. A written posttest was administered after the course.

The participants in the course were all volunteers for the study. The participants attended the course after being scheduled by their organization's training manager. They were selected based on their need for the course. The class is required every two years for anyone who is working with or frequenting the area where the hazardous material is present.

At the beginning of each course, the instructor selected a student from each class to obtain the consent of each participant for the study. The selected student administered a consent form where the selected student signed as a witness that each student had read and voluntarily consented to participate in the study. After the consent forms were turned over to the instructor, the instructor administered a self-esteem and self-efficacy instrument to each participant. To ensure anonymity, each participant was assigned a unique number at the beginning of each class known only to the researcher. The participants placed this unique number on the self-efficacy and self-esteem instruments. At the end of training, the instructor administered a posttest to each participant. The participants placed the assigned unique number on the written posttest. Using the unique number on the two instruments and the test, the students' self-efficacy, self-esteem, and test scores were correlated.

CHAPTER IV

RESULTS OF THE DATA ANALYSIS

Findings

The previous chapter presented the methodology used in this study. It described the subjects, instruments, and the data collection procedure. This chapter presents the method for analyzing the data and the results of the data analysis.

Data Analysis

A total of 75 employees participated in the study. However, five of the participants were disqualified because they supplied incomplete information. Information was extracted from the instruments and the tests using an SPSS Statistical Analysis program. Pearson r correlation was obtained for the sample population between self-esteem and training performance. Also, using the same procedure, the correlation between self-efficacy and training performance and the correlation between self-esteem and self-efficacy were obtained. The mean and standard deviation of the test scores used to measure training performance were also computed.

The Relationship Between Self-Esteem and Training Performance

The data analysis revealed the mean of self-esteem for the sample to be 80.97 with a standard deviation of 17.69. The scores ranged from 16 to 100. Consulting Psychologists Press, Inc. (1989) reported that the means for sample populations using the self-esteem scale have generally been in the range of 70 to 80 with a standard deviation of 11 to 13. The results of this study fell in line with those findings. Table 1 shows these data.

Table 1

Self-Efficacy/Self-Esteem Mean, Standard Deviation, Minimum Score, and Maximum Score

	N	Minimum	Maximum	Mean	Standard Deviation
Self-Efficacy	70	1.40	9.00	7.2286	1.5826
Self-Esteem	70	16.00	100	80.9714	17.6856

The correlation analysis revealed a significant positive relationship between self-esteem and training performance ($r = .303$, $p = .011$). As self-esteem scores increased, the training performance scores as measured by the written test increased. Table 2 shows these data.

The Relationship Between Self-Efficacy and Training Performance

The analysis of the data revealed the mean of self-efficacy for the sample to be 7.23 with a standard deviation of 1.58. The scores ranged from 1.4 to 9.0. The self-efficacy scale ranged from 0-9 and the average of the self-efficacy scores of the sample was considered high. Table 1 shows these data.

After the correlation was run, the data showed a significant positive relationship between self-efficacy and training performance ($r = .307$, $p = .010$). As self-efficacy increased, the training performance as measured by the written test increased. Table 2 shows these data.

The Relationship Between Self-Efficacy and Self-Esteem

The data showed a significant positive relationship between self-esteem and self-efficacy ($r = .427$, $p = < .001$). As self-esteem increased, self-efficacy increased. Also, as self-efficacy increased, self-esteem increased. Table 2 shows these data.

Test Scores

The data analysis showed that the means of the sample population's test scores was 93.69 with a standard deviation of 4.11. The scores ranged from 80% to 100%. Table 3 shows these data.

Table 2

Self-Efficacy, Self-Esteem, and Performance Correlations

		Performance	Efficacy	Esteem
Performance	Pearson Correlation	1.000	.307**	303*
	Sig. (2-tailed)		.010	.011
	N	70	70	70
Efficacy	Pearson Correlation	.307**	1000	.427**
	Sig. (2-tailed)	.010		<.001
	N	70	70	70
Esteem	Pearson Correlation	.303*	.427**	1.000
	Sig. (2-tailed)	.001	<.001	
	N	70	70	70

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Table 3

Test Scores, Means, Standard Deviation, Minimum Score, and Maximum, Score

N	Minimum	Maximum	Mean	Standard Deviation
70	80	100	93.69	4.11

Summary

This chapter presented the method for analysis, the data, and the results of the data analysis. There was a significant positive relationship between: self-efficacy and training performance; self-esteem and self-efficacy; and self-esteem and training performance.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The previous chapter presented the method for analyzing the data and the results of the data analysis. The purpose of this chapter is to summarize the research that was conducted. A summary of the null hypotheses that were tested and the methodology used to test the hypotheses is given. Following the summary is a discussion of the conclusions and recommendations based on the findings of this study.

Summary of this Study

The study grew out of the speculation that there was a relationship among self-esteem, self-efficacy, and academic/training performance in the classroom. The review of literature presented in Chapter II revealed that studies conducted to determine relationships and predictive validity among self-esteem, self-efficacy, and academic performance have been contradictory. For example, some researchers found significant positive relationships between self-esteem and performance, while other researchers found no significant positive relationship. Also, at least one study found no link between self-efficacy and performance.

The study consisted of 75 full-time workers at a government funded nuclear operations complex. Demographics variables such as socio-economics, ethnicity, and gender may have influenced personnel self-esteem and self-efficacy. However, these variables were not controlled.

Two null hypotheses were developed for this study. The first hypothesis focused on whether or not there was a significant relationship between self-esteem and classroom

performance. The second hypothesis focused on whether there was a significant relationship between self-efficacy and classroom performance.

The data for the study were gathered from self-esteem and self-efficacy instruments. The Coopersmith Self-Esteem Instrument measured self-esteem in this study. A Grade Self-Efficacy Scale adopted from a study conducted by Mone et al. in 1995 measured self-esteem in this study. An existing course posttest measured academic training performance.

Data were collected at the beginning of each class using the self-efficacy and self-esteem instruments. At the end of classroom training a posttest was administered to each participant.

Major Findings

1. There was a significant positive relationship between self-esteem and training performance.
2. There was a significant positive relationship between self-efficacy and training performance.
3. There was a significant positive relationship between self-esteem and self-efficacy.

Conclusions

Within the limitations of this study, the following conclusions have been drawn. In this chapter a discussion of these conclusions and a comparison of these conclusions with other studies will take place.

The analysis of data from this study revealed a significant positive relationship between self-esteem and training performance. Although relationships might not equal

predictive ability, it might be expected that workers who scored higher on the self-esteem instrument scored higher on the written test.

The analysis of data showed a significant positive relationship between self-efficacy and training performance. Again it might be expected that workers who scored higher on the self-efficacy instrument scored higher on the written test.

If one returned to the definition of self-esteem, it could be found that self-esteem consisted of two components: self-worth and self-efficacy. Thus it might be postulated that there would be a significant positive relationship between self-esteem and self-efficacy. It might be also postulated that a person with high self-esteem would have high self-efficacy and that a person with high self-efficacy would have high self-esteem. This study supported those postulations.

By returning to the original problem that led to this research, it could be found that there is not one definitive answer regarding which was best for the workers. The best courses for workers could be a course that builds an individual's self-esteem or it could be one that builds self-efficacy. However, more researchers and pundits refuted the idea that self-esteem was more predictive of or had a significant positive relationship to academic success than self-efficacy. Based on the review of literature, it might be expected that self-efficacy would have had a stronger positive relationship to training performance than self-esteem. However, the data did not support this expectation. The relationships were too close to declare either construct as having a stronger relationship than the other to training performance. This might have been because there was a positive significant relationship between self-efficacy and self-esteem. This supported Tracy's (1995) statement that self-esteem included two components, self-efficacy and self-worth.

Individuals' self-efficacy affects their self-esteem. Also, individuals' self-esteem affects their self-efficacy. Based on the review of literature and the results of this study, it might be concluded that if instructors want to raise students' self-efficacy, they could implement programs to raise students' self-esteem. Consequently, if instructors want to raise students' self-esteem, they could implement programs to raise students' self-efficacy. Therefore, based on this study, training professionals might implement programs that build workers' self-esteem or self-efficacy. Either type of course should increase the workers' performance.

Using college students, Mone et al. (1995) found that self-efficacy was significantly predictive of academic performance. Thus one might postulate that there would be a positive significant relationship between self-efficacy and training performance. This study supported that postulation. Although this study used employees in the workplace rather than college students, a significant positive relationship between self-efficacy and training performance was found. By contrast, Mone et al. found that self-esteem was not significantly predictive of academic performance using college students. Thus, it might be postulated that there would be no positive significant relationship between self-esteem and training performance. This study did not support that postulation. A significant positive relationship between self-esteem and training performance using employees in the workplace was found.

Although this study supported only part of the results of the work conducted by Mone et al. (1995), it supported the conclusions of Riser (1992) who found that self-esteem influenced academic achievement. Riser found that self-esteem both influenced and is influenced by academic achievement. Riser used data collected from 242 students

in grades 7-12. Based on Riser's findings, one might postulate that there would be a significant positive relationship between self-esteem and performance using data from employees in the workplace. This study supported that postulation. However, one might still question the validity of comparing students in grades 7-12 to adults in the workplace. College students might provide a better comparison with studies of employees in the workplace.

Abouserie (1995) and Chandler (1997), for example, used data collected from college students. They determined that there was a significant positive correlation between students' self-esteem and test scores. This study corroborated those findings.

Bouchard (1990) supported the idea that self-efficacy is predictive of academic success using 64 college students. She reported that a significant relationship existed between self-efficacy and academic success. Vrugt et al. (1997) also reported that their study using college students supported the idea that academic self-efficacy contributed to exam performance. Thus it might be postulated that there would be a positive significant relationship between self-efficacy and training performance using employees in the workplace. The results of this study supported that postulation.

Recommendations

Based on the findings and conclusions of this study, recommendations for future research efforts are presented. This study and most of the other studies on self-esteem and self-efficacy in the review of literature relied on quantitative self-report data about the students' beliefs about themselves. Jinks, Lorsbach, and Morey (1995) suggested that to complement the body of research, longitudinal observational research is needed that will

better capture the source of self-efficacy beliefs and their potential for motivating academic performance. Also, this type of longitudinal study should be conducted for self-esteem. Further longitudinal studies should also be conducted using control and experimental groups. In this way one could alter the self-esteem and self-efficacy of the experimental group and compare the results to the control group.

Other studies might be conducted using a larger sample than the subjects used in this study. In this way researchers could further examine whether there is a significant difference in the scores on self-esteem and self-efficacy instruments and academic/training performance as did Mone et al. in 1995.

Implications

Based on quantitative analysis of data from this study's data, there was found a significant positive relationship among self-efficacy, self-esteem, and training performance. Thus it might be concluded that if HRD and Training professionals could raise students' self-esteem and self-efficacy, they could raise their training performance. HRD and Training professionals should be aware of the relationship among self-esteem, self-efficacy, and academic/training performance. In order to develop effective training programs, these professionals might focus more on individual variables such as self-esteem and self-efficacy when developing training programs.

REFERENCES

References

Abouserie, R. (1995). Self-esteem and achievement motivation as determinants of students approaches to studying. Studies in Higher Education, 20 (1), 19-27.

Berube, M. S. (1993). The American heritage college dictionary (3rd ed.). Boston: Houghton Mifflin.

Bandura, A. (1997). Self-efficacy: The exercise of control (1st ed.). New York: W.H. Freeman.

Bouchard, T. B. (1990). Influence of self-efficacy on performance in a cognitive task. Journal of Social Psychology, 130 (3), 353-364.

Branden, N. (1987). How to raise your self-esteem (1st ed.). New York: Bantam Books.

Branden, N. (1992). The power of self-esteem (1st ed.). Deerfield Beach, FL: Health Communications, Inc.

Branden, N. (1994). The six pillars of self-esteem (1st ed.). New York: Bantam Books.

Cantell, R.B., & Scheier, I. H. (1961). The meaning and measurement of neuroticism and anxiety. New York: Ronald.

Chandler, T. A. (1997). Self-esteem and causal attributions. Genetic, Social & General Psychology Monographs, 123 (4), 479-492.

Consulting Psychologists Press, Inc. (1989). Self-Esteem Inventories, Stanley Coopersmith, Ph.D. Palo Alto, California

Gardner, D. G., & Pierce, J. L. (1998). Self-esteem and self-efficacy within the organizational context: An empirical examination. Group & Organization Management, 23 (1), 48-71.

Gokhale, A. A. (1996). Effectiveness of computer simulation for enhancing higher order thinking. Journal of Industrial Teacher Education [Online]. Available: http://scholar.lib.vt.edu/ejournals/JITE/v33n4/jite--v33n4.gokhale.html

Harvice, W. L. (1998). A comparison of college students' achievement following traditional and integrated media presentations. Journal of Industrial Teacher Education [Online]. Available: http://scholar.lib.vt.edu/ejournals/JITE/v35n4/havice.html

Hill, N. (1966). Think and grow rich. (3rd ed.). New York: Hawthorn.

Jinks, J., Lorsbach, A., & Morey, M. (1995). Student efficacy beliefs and success in school: Implications for science teachers. Illinois State University [Online]. Available http://www.coe.ilstu.edu/scienceed/jinks/efficacyarticle.htm

Kohn, A. (1994). The truth about self-esteem. Phi Delta Kappan. [Online]. Available: http://www.alfiekohn.org/teaching/tase.htm

Locke, E. A., & Latham, G. P. (1990). A theory of goal setting and task performance. Englewood Cliffs, NJ: Prentice Hall.

Mackenzie, D. S., & Jansen, D. G. (1998). Impact of multimedia computer-based instruction on student comprehension of drafting principles. Journal of Industrial Teacher Education [Online]. Available: http://scholar.lib.vt.edu/ejournals/JITE/v32n4/Mackenzie.html

Maltz, M. (1960). Psycho-cybernetics, a new way to get more out of life. New York: Prentice-Hall.

Martorana, J. (1996). Send adults back to school. Business News, 5, 23-24.

Mathieu, J. E., Matheiu, J. W., & Tannenbaum, S. I. (1993). Individual and situational influences on the development of self-efficacy: Implications for training effectiveness. Personnel Psychology, 46 (1) 125-148.

Mone, M. A. (1994). Comparative validity of two measures of self-efficacy in prediction academic goals and performance. Educational & Psychological Measurement, 54 (2), 516-530.

Mone, M. A., Baker, D. D., & Jeffries, F. (1995). Predictive validity and time dependency of self-efficacy, self-esteem, personal goals, and academic performance. Educational & Psychological Measurement, 55 (5), 716-728.

Ostrander, S., Schroeder, L., & Ostrander, N. (1994). Super-learning 2000 1st ed.). New York: Dell Publishing.

Pajares, F. (1995). Overview of self-efficacy. Emory University [On-line]. Available: http://www.emory.edu/EDUCATION/mfp/eff.html

Pascarella, P. (1999). It all begins with self-esteem. Management Review, 88 (2), 60-62.

Peterson, C., & Austin, J. T. (1981). Coopersmith Self-Esteem Inventories. The mental measurements yearbook (9th ed.). Lincoln NE: Buros Institute.

Riser, W. (1992). Decomposing the reciprocal relationship between academic achievement and general self-esteem. Youth and Society, 24 (2), 123-149.

Robertson, I. (1987). Sociology (3rd ed.). New York: Worth Publishers.

Rogers, C. R. (1951). Client centered therapy. Boston: Houghton Mifflin.

Rosenberg, M. (1965). Society and the adolescent self-image. Princeton, NJ: Princeton University Press.

Schreiber, E. H., & Schreiber, K. N. (1995). Using relaxation techniques and positive self-esteem to improve academic achievement of college students, Psychological Reports, 76, 929-930.

Schwartz, D. (1959). The magic of thinking big (1st ed.). Englewood Cliffs, NJ: Prentice-Hall.

Sewell, T. E. (1981). Coopersmith Self-Esteem Inventories. The mental measurement yearbook (9th ed.). Lincoln NE: Buros Institute.

Spatz, K., & Johnston. (1973). Internal consistency of the Coopersmith Self-Esteem Inventories. Educational and Psychological Measurements, 33, 875-876.

Stajkovic, A. D., & Luthans, F. (1998). Social cognitive theory and self-efficacy: going beyond traditional motivational and behavioral approaches. Organizational Dynamics, 26 (4), 62-80.

Stanley, K. D., & Murphy, M. R. (1997). A comparison of general self-efficacy with self-esteem. Genetic, Social & General Psychology Monographs, 123 (1), 81-100.

Tiller, D. (1995). Self-efficacy in college students. Missouri Western State College [On-line]. Available: http://www.mwsc.edu/~psych/research/ psy302/fall95/ tiller.htm

Tracy, B. (1995). Maximum achievement (1st ed.). New York: Simon & Schuster.

University of Hawaii. (1996). Affective monitoring of internet learners: Perceived self-efficacy and success [On-line]. Available: http://www2.hawaii.edu/~nahl/articles/monitoring/monitoring. html

Vrugt, A. J., Langereis, M. P., & Hoogstraten, J. (1997). Academic self-efficacy and malleability of relevant capabilities as predictors of exam performance. The Journal of Experimental Education, 66 (1), 61-73.

Waldersee, R. (1994). Self-efficacy and performance as a function of feedback sign and anxiety: A service experiment. Journal of Applied Behavioral Science, 30 (3), 346-357.

Weiner, B. (1986). An attributional theory of motivation and emotion. New York: Spring-Verlag.

Whalen, R. (1997). Increased training in the 90s calls for bottom line results. American Salesman, 42 (1), 6-9.

Whetstone, T. S. (1995). Enhancing psychomotor skill development through the use of mental practice. Journal of Industrial Teacher Education [Online]. Available: http://scholar.lib.vt.edu/ejournals/JITE/v32n4/whetstone.html

Woo, T. O., & Frank, N. (2000). Academic performance and perceived validity of grades: An additional case for self-enhancement. The Journal of Social Psychology, 140 (2), 218-226.

Wood, R. E., & Locke, E. A. (1987). The relation of self-efficacy and grade goals to academic performance. Educational and Psychological Measurement, 47, 1013-1024.

APPENDIXES

APPENDIX A

Self-Efficacy Instrument

Please Print

Number: _____

Date: _____

Please mark your confidence on the scale from 0 to 9 for obtaining each of the five grades levels. Place an x below the appropriate numbers.

Grade	0	1	2	3	4	5	6	7	8	9
96-100										
90-95										
85-89										
80-84										
75-79										

APPENDIX B

ADULT FORM SEI

Coopersmith Inventory

Stanley Coopersmith, Ph.D.
University of California at Davis

Please Print

Name _____ Age _____

Institution _____ Sex: M ___ F___

Occupation _____ Date _____

Directions

On the other side of this form, you will find a list of statements about feelings. If a statement describes how you usually feel, put an X in the column "Like Me." If a statement does not describe how you usually feel, put an X in the column "Unlike Me." There are no right or wrong answers. Begin at the top of the page and mark all 25 statements.

	x4 =	

Consulting Psychologists Press, Inc.
3803 E. Bayshore Road • Palo Alto, CA 94303

APPENDIX C

Like Me	Unlike Me	
☐	☐	1. Things usually don't bother me.
☐	☐	2. I find it very hard to talk in front of a group.
☐	☐	3. There are lots of things about myself I'd change if I could.
☐	☐	4. I can make up my mind without too much trouble.
☐	☐	5. I'm a lot of fun to be with.
☐	☐	6. I get upset easily at home.
☐	☐	7. It takes me a long time to get used to anything new.
☐	☐	8. I'm popular with persons my own age.
☐	☐	9. My family usually considers my feelings.
☐	☐	10. I give in very easily.
☐	☐	11. My family expects too much of me.
☐	☐	12. It's pretty tough to be me.
☐	☐	13. Things are all mixed up in my life.
☐	☐	14. People usually follow my ideas.
☐	☐	15. I have a low opinion of myself.
☐	☐	16. There are many times when I would like to leave home.
☐	☐	17. I often feel upset with my work.
☐	☐	18. I'm not as nice looking as most people.
☐	☐	19. If I have something to say, I usually say it.
☐	☐	20. My family understands me.
☐	☐	21. Most people are better liked than I am.
☐	☐	22. I usually feel as if my family is pushing me.
☐	☐	23. I often get discouraged with what I am doing.
☐	☐	24. I often wish I were someone else.
☐	☐	25. I can't be depended on.

VITA

Garland Sharp was born in Humboldt, Tennessee. He attended Stigall High School in Humboldt, Tennessee, where he graduated in June, 1969. He entered the State Technical Institute at Memphis in 1978 and received Associate of Engineering Degrees in Mechanical and Industrial Engineering Technology in 1979. He entered the University of Tennessee in 1990 and received a Bachelor of Science in Technological Adult Education in 1993. In December of 2001 he received his Master of Science in Human Resource Development from the University of Tennessee. He is presently working in the Human Resource Division at the Y-12 National Security Complex in Oak Ridge, Tennessee.